

This Page Is Inserted by IFW Operations  
and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problem Mailbox.**

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
23 August 2001 (23.08.2001)

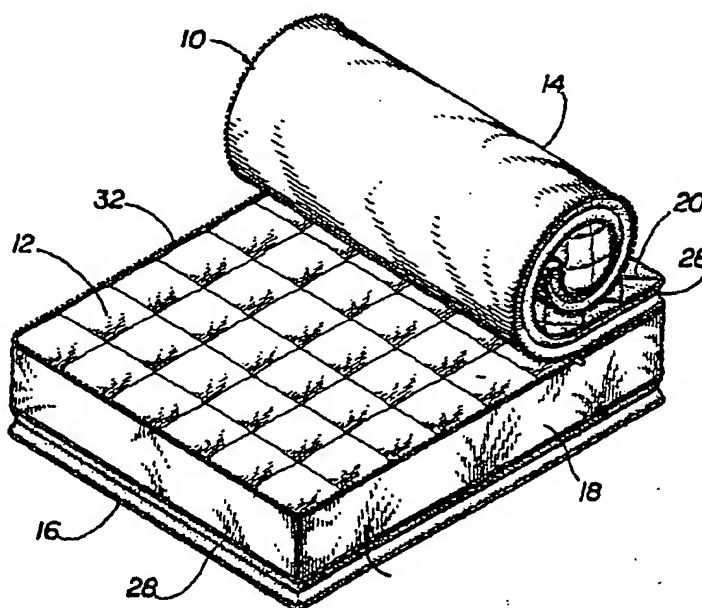
PCT

(10) International Publication Number  
WO 01/60213 A1

- (51) International Patent Classification<sup>7</sup>: A47C 27/00 (74) Agents: LISCHER, Dale; Smith, Gambrell & Russell, LLP, Suite 3100, Promenade II, 1230 Peachtree Street, N.E., Atlanta, GA 30309-3592 et al. (US).
- (21) International Application Number: PCT/US01/04190
- (22) International Filing Date: 9 February 2001 (09.02.2001) (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 09/504,411 15 February 2000 (15.02.2000) US (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
- (71) Applicant: SIMMONS COMPANY [US/US]; Suite #800, One Concourse Parkway, Atlanta, GA 30328-5369 (US).
- (72) Inventor: MILLER, R., Scott; 4340 Change Drive, Buford, GA 30519 (US). Published: — with international search report

[Continued on next page]

(54) Title: METHODS AND APPARATUS FOR REFURBISHING BEDDING MATTRESSES



(57) Abstract: A cover (10) for a tight top mattress (12) includes an upper panel (14), a lower panel (16), and a border panel (18). A zipper (32) connects the border panel (18) to either the upper or lower panel (14, 16). At least one of the upper or lower panels (14, 16) is a quilted foam and fabric assembly which is dimensioned and configured as a pillow top. The upper, lower and border panels define an enclosure for closely fitting and receiving the mattress.

WO 01/60213 A1

# METHODS AND APPARATUS FOR REFURBISHING BEDDING MATTRESSES

## BACKGROUND OF THE INVENTION

### 1. Field of the Invention

The present invention relates generally to methods and apparatus for refurbishing bedding mattresses and for extending the effective life of used bedding mattresses. More particularly, it relates to mattress covers which are structured and dimensioned to receive and tightly enclose conventional tight top bedding mattresses and to methods for employing such mattress covers to convert tight top mattresses into pillow top mattresses and to extend the usable life of the mattresses by renewing the comfort and feel and enhancing the appearance of the mattresses.

### 2. Description of the Related Art

Conventional bedding mattresses having what is generally known as tight top construction have long been in widespread use in virtually every area of the world. Typically, such mattresses include a core assembly which may be constructed of a plurality of coil springs with predetermined resilience. The springs are often covered with an upholstery layer which may include one or more layers of foam. The upholstery layer normally is covered with a sewn quilt layer which may include foam, fiber, ticking and other material.

In more recent times, a form of mattress has become popular known as a "pillow top" mattress. The pillow top mattress generally is constructed using a standard mattress core, but has a raised V-shaped fabric border sewn around its edges to which a separate quilted pillow-like layer, typically including fiber and/or foam and ticking is attached. The pillow top

construction adds a degree of enhanced comfort for the user and, thus, it has become accepted as a somewhat higher quality mattress over conventional tight top mattress products. An example of an adjustable firmness mattress pillow top is disclosed in U.S. Patent No. 4,424,600 issued to Callaway and assigned to the common assignee herein.

It has been common practice to replace mattresses after they have become soiled and/or worn in appearance as a result of usage of the mattress over an extended period of time. However, mattress replacement is normally rather expensive, particularly in the case of high volume consumers of bedding equipment such as institutional users such as hotels and similar hospitality enterprises where multiple sleeping accommodations are offered to the public.

Accordingly, it would be desirable to provide a means for refurbishing a used mattress so that its useful life can be significantly extended. Furthermore, it would be desirable to provide such a means which could be used conveniently to renew a mattress. Still further, it would be desirable to provide such a means which has the additional advantage of converting a conventional tight top mattress into a pillow top mattress.

### **SUMMARY OF THE INVENTION**

The present invention improves over the prior art by providing a cover for a tight top mattress including an upper panel, a lower panel and a border panel. A zipper arrangement connects the border panel to either the upper or the lower border panel. At least one of the upper or lower panels is a quilted foam and fabric assembly which is structured and dimensioned as a pillow top. The upper, lower and border panels define an enclosure for closely fitting and receiving an existing mattress construction.

### **BRIEF DESCRIPTION OF THE DRAWING**

The foregoing and other novel features and advantages of the invention will be better understood upon a reading of the following detailed description taken in conjunction with the accompanying drawing wherein:

FIG. 1 is a front side perspective of a mattress cover constructed in accordance with the principles of the present invention shown as installed on a mattress;

FIG. 2 is a front side perspective view of one form of the cover illustrated without a mattress;

FIG. 3 is a cross-sectional view taken substantially along the line 3-3 of FIG. 2;

FIG. 4 is a front side perspective view of a mattress and cover shown fully assembled and with a zipper reversed from that shown in FIGS. 1 and 2; and

FIG. 5 is a front side perspective view of an alternative cover having a pillow top assembly only on the upper side of the mattress.

### **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

Referring now to the drawing, FIGS. 1 and 2 illustrate a mattress cover constructed according to the invention and designated generally by the numeral 10 for enclosing a conventional tight top mattress 12. The cover 10 includes as its principal components an upper panel 14, a lower panel 16 and a border panel 18. In a preferred form, the upper and lower

panels 14 and 16 are both constructed in the form of a conventional pillow top assembly. To this end, both the upper and lower panels 14 and 16 include a quilt assembly 20. As best illustrated in FIG. 3, the quilt assembly 20, preferably, includes a layer of fiber 22 such as a hollow filled Dacron fiber, a layer of foam material 24 such as a flat or convoluted foam and an outer layer of ticking material 26 such as damask. In a most preferred embodiment of this invention, the layers 22 and 24 and ticking 26 are all sewn together into a unitary construction comprising the quilt assembly 20.

Also, the quilt assembly 20 includes a V-shaped peripheral edge strip 28 formed from any appropriate fabric. In a preferred embodiment of this invention, the upper panel 14 is connected to the border panel 18 by sewing the V-shaped fabric strip 28 to the border panel 18, for example, at a top or head end 30 of the cover 10 and a zipper arrangement 32 extends around the remaining two sides 34, 36 and bottom or foot end 38 of the cover 10. The lower panel 16 may have a construction similar to the upper panel 4 but can simply be sewn to the border panel 18 with a V-shaped strip 28 without a zipper arrangement. By this construction, a conventional tight top mattress can be inserted into the interior space 40 of the cover 10 and the upper panel 14 can be zippered closed to completely enclose the mattress (see FIG. 2).

FIG. 4 illustrates a completed assembly of a mattress cover 42 fully enclosing a mattress (not shown). However, in this embodiment the upper panel 14 is sewn around its edges to the border 18 with intermediate strip 28, while the lower panel, only the edge of which can be seen, is sewn to a zipper 44 and an intermediate strip 28. Like the embodiment of FIGS. 1-3, the zipper 42 need only extend around the sides and foot of the cover 42.

FIG.5 illustrates a further embodiment of a mattress cover 50 wherein the upper panel 14 is constructed as a pillow top assembly as heretofore described. However, bottom panel 52 is only a single fabric layer, such as ticking, sewn directly to the border 18 without a pillow top assembly.

It can now be appreciated that a cover constructed as illustrated and described offers considerable advantages in converting a standard tight top mattress to a reversible pillow top mattress having enhanced comfort and visual appeal. Preferably, the cover is dimensioned as to snugly fit the enclosed mattress which may have standard twin, queen or king size dimensions. While the cover may be used to renew a used tight top mattress thereby extending its useful life, it is also advantageously used to simply convert any age tight top mattress to a pillow top mattress if the user desires. Although the illustrated covers 10 and 42 are shown with pillow top panels on both its upper and lower sides for mattress reversibility, it will be appreciated that only one side need have a pillow top construction if desired.

While the invention has been described in connection with preferred embodiments, it will be apparent to those skilled in the art that many changes and modifications may be made without departing from the true spirit and scope of the invention. Accordingly, it is intended by the appended claims to cover all such changes and modifications as come within the spirit and scope of the invention.

## WHAT IS CLAIMED IS:

1. A cover assembly for refurbishing a tight top bedding mattress, the mattress having a relatively planar top surface, a relatively planar bottom surface and side walls interconnecting the top and bottom surfaces, the cover assembly comprising:
  - a) a first quilted foam and fabric cover panel assembly;
  - b) a second cover panel assembly;
  - c) a border cover panel assembly; and
  - d) a zipper assembly formed in the border cover panel assembly for connecting the border cover panel assembly to at least one of the first and second cover panel assemblies in a manner such that the first and second cover panel assemblies and the border cover panel are interconnected to define an enclosure for receiving and closely fitting about the top surface, the bottom surface and the side walls of the mattress with the first panel assembly providing a pillow top arrangement on the mattress;  
wherein the resulting construction enables extended life of the mattress.
2. The cover assembly of claim 1 wherein both said first and second cover panel assemblies are dimensioned as pillow top arrangements.
3. The cover assembly of claim 1 wherein at least one of the first and second cover panel assemblies includes a generally V-shaped fabric edge portion sewn to the border and cover panel assembly.



4. The cover of claim 1 wherein the zipper extends around three sides of the border cover panel assembly.

5. A method for converting a tight top mattress to a pillow top mattress comprising the steps of:

providing a cover having an upper panel, a lower panel and a border panel wherein a zipper at least partially connects the border to either the upper panel or lower panel and wherein either the upper panel or lower panel is formed as a pillow top assembly;

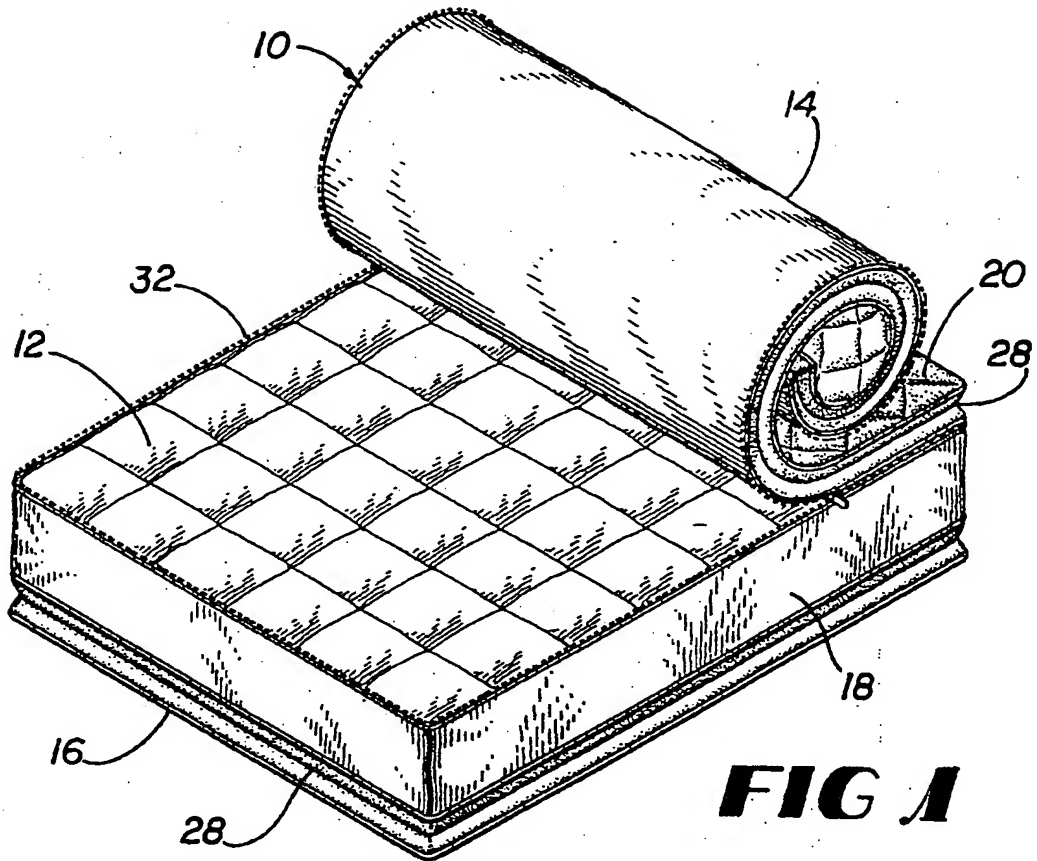
inserting a tight top mattress into the cover with the upper panel open and with the sides of the mattress aligned with similarly dimensioned panels of the cover; and

closing the zipper to completely enclose the mattress within the cover.

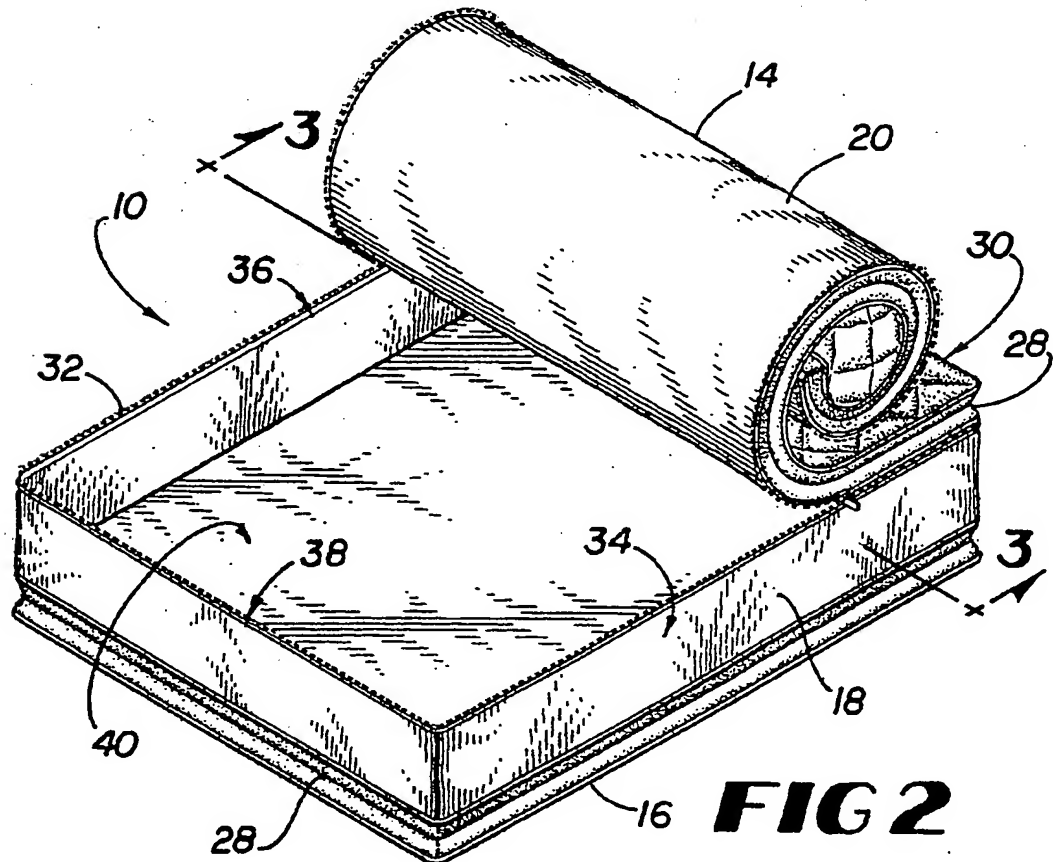
6. The method of claim 4 wherein both the upper panel and lower panel are formed as pillow top assemblies.

7. The method of claim 5 wherein the zipper extends around three sides of the cover.

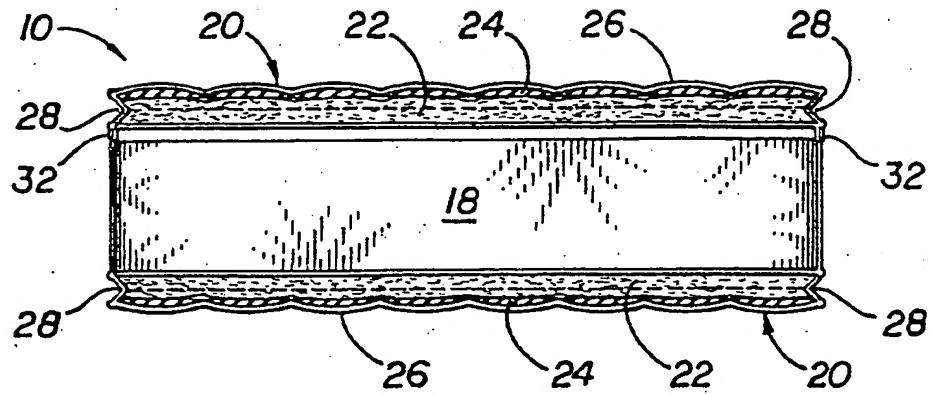
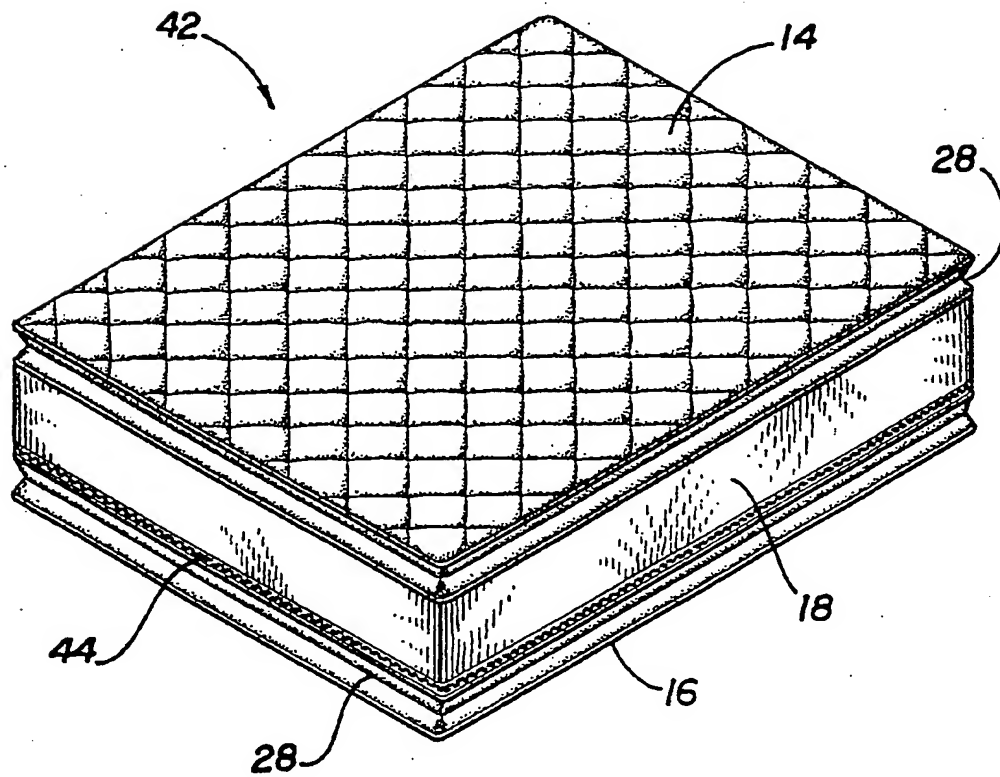
1/3

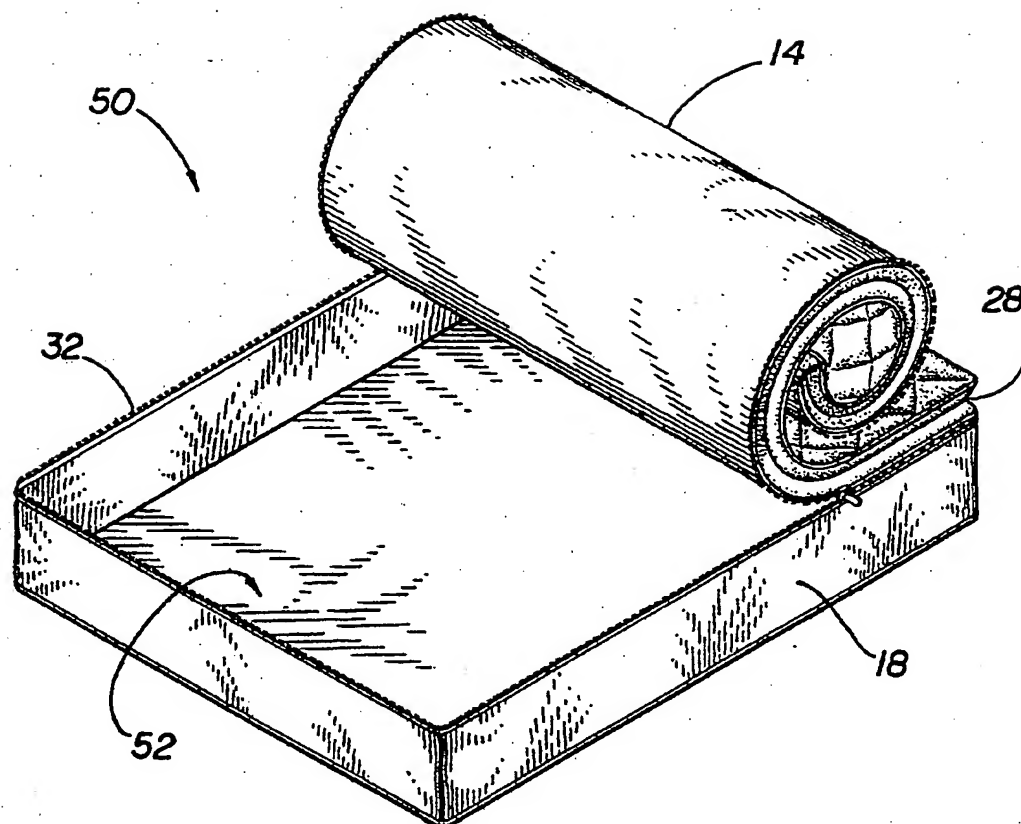


**FIG 1**



**FIG 2**

**FIG 3****FIG 4**

**FIG 5**

# INTERNATIONAL SEARCH REPORT

Intern. Application No  
PCT/US 01/04190

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC 7 A47C27/00		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) IPC 7 A47C		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 2 508 780 A (ENNEREV SPA) 7 January 1983 (1983-01-07) claims; figures	1,2,4-7
X	US 5 065 485 A (ZÖCCO GEORGE) 19 November 1991 (1991-11-19) column 4, line 38-46; figures 2-4	1,2,4-7
X	FR 912 642 A (MC MILLAN BOYD DONALD) 14 August 1946 (1946-08-14) page 2, column 1, line 8-29; figures 1,12	1,2,4-7
A	US 2 229 385 A (ELROY S. MUNSON) 21 January 1941 (1941-01-21) claim 1; figures 1,2	3
-/-		
<div style="display: flex; justify-content: space-between;"> <span><input checked="" type="checkbox"/> Further documents are listed in the continuation of box C.</span> <span><input checked="" type="checkbox"/> Patent family members are listed in annex.</span> </div>		
<b>* Special categories of cited documents:</b> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>*A* document defining the general state of the art which is not considered to be of particular relevance</p> <p>*E* earlier document but published on or after the international filing date</p> <p>*L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>*O* document referring to an oral disclosure, use, exhibition or other means</p> <p>*P* document published prior to the international filing date but later than the priority date claimed</p> </div> <div style="width: 45%;"> <p>*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>*S* document member of the same patent family</p> </div> </div>		
Date of the actual completion of the international search  <div style="text-align: center;">29 May 2001</div>		Date of mailing of the international search report  <div style="text-align: center;">07/06/2001</div>
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl. Fax (+31-70) 340-3016		Authorized officer  <div style="text-align: center;">Amghar, N</div>

# INTERNATIONAL SEARCH REPORT

Intern. Application No.

PCT/US 01/04190

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>EP 0 068 766 A (SIMMONS USA CORP)  5 January 1983 (1983-01-05)  abstract; figures 1,1B  -----</p>	1-7

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 01/04190

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
FR 2508780	A	07-01-1983	IT 1138829 B DE 3223770 A	17-09-1986 20-01-1983
US 5065485	A	19-11-1991	NONE	
FR 912642	A		NONE	
US 2229385	A	21-01-1941	NONE	
EP 0068766	A	05-01-1983	AU 8497782 A JP 58073317 A	06-01-1983 02-05-1983